

Coastal Texas Protection and Restoration Project

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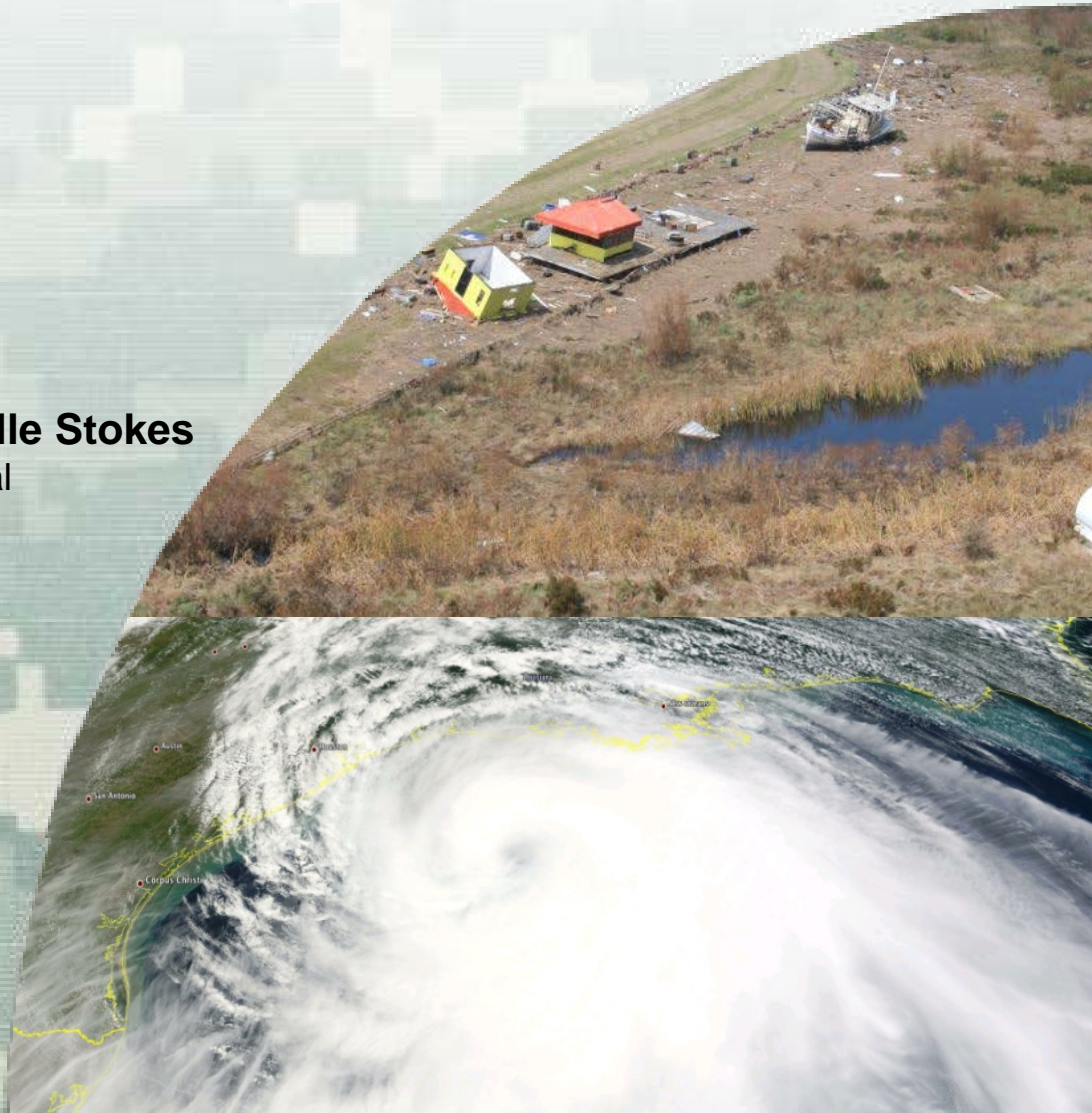
Project Management / Planning / Environmental

USACE, Galveston District

August 2014



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Discussion Topics

- Study Authorization
- Meeting Goals
- Coastal TX Project
- Sabine Pass to Galveston Bay - Related Study
- Corps Process
- Summary
- Submittal of Comments/Ideas



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Coastal TX Study Authorization

- WRDA of 2007 Section 4091. Coastal Texas Ecosystem Protection and Restoration, Texas.
“(a) In General.—The Secretary shall develop a comprehensive plan to determine the feasibility of carrying out projects for flood damage reduction, hurricane and storm damage reduction, and ecosystem restoration in the coastal areas of the State of Texas”



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Meeting Goals

- Provide information on the Coastal Texas Project
- Provide an update on current on-going Sabine Pass to Galveston Bay Study
- Discuss the Corps process for Federally funded projects
- Receive input/comments from all stakeholders



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Legend

- Region 1
- Region 2
- Region 3
- Region 4

Source: Esri, Digital Gmapping, Aerial Community



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Coastal Texas Study Goals

- Develop long-term comprehensive coastal plan for Texas
- Identify all problems and opportunities for Coastal Storm Damage Risk Management and Ecosystem Restoration Projects
 - Potential detailed focus on specific regions
- Identify potential projects that:
 - Protect lives, homes, infrastructure and industry
 - Protect the nation's economy
 - Protect and restore the environment and natural resources



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Consider the Following Questions:

- How is your community (or agency/organization) most vulnerable to coastal storms?
- What strategy should be implemented to reduce the risk of coastal storms?
- What ecosystem restoration projects are most needed, or could be implemented to improve coastal resilience?



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Project Phase

- Reconnaissance Study
 - Determine Federal Interest
 - Gather information from:
 - General public
 - Towns, communities and public officials
 - Industry stakeholders
 - Environmental Resource Agencies
 - State and County Officials
 - Universities & Research Institutions
 - Identify non-Federal Sponsor
 - Execute Feasibility Cost Sharing Agreement



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Texas Resources of National Importance

Population Centers

- 18 coastal Counties with 6.1 million residents/over 24% of the State's population
- Houston/Galveston (Houston - Nation's 4th largest city)
- Beaumont/Port Arthur/Freeport
- Corpus Christi/Brownsville/Harlingen Area/South Padre Island

Economic Resources

- Nationally ranked deep-draft Ports
 - Houston: 2nd; Beaumont: 5th; Corpus Christi: 7th ; Texas City: 11th
- Gulf Intracoastal Waterway (GIWW): 423 miles of major shallow draft commercial corridor
- 40% of the Nation's petrochemical industry
- 25% of national petroleum-refining capacity

Environmental Resources

- 367 miles of Gulf shoreline
- 3.9 million acres of wetlands
- 21 State and Federal Wildlife Refuges
- Endangered Species/Critical Habitats
- Commercial Fisheries



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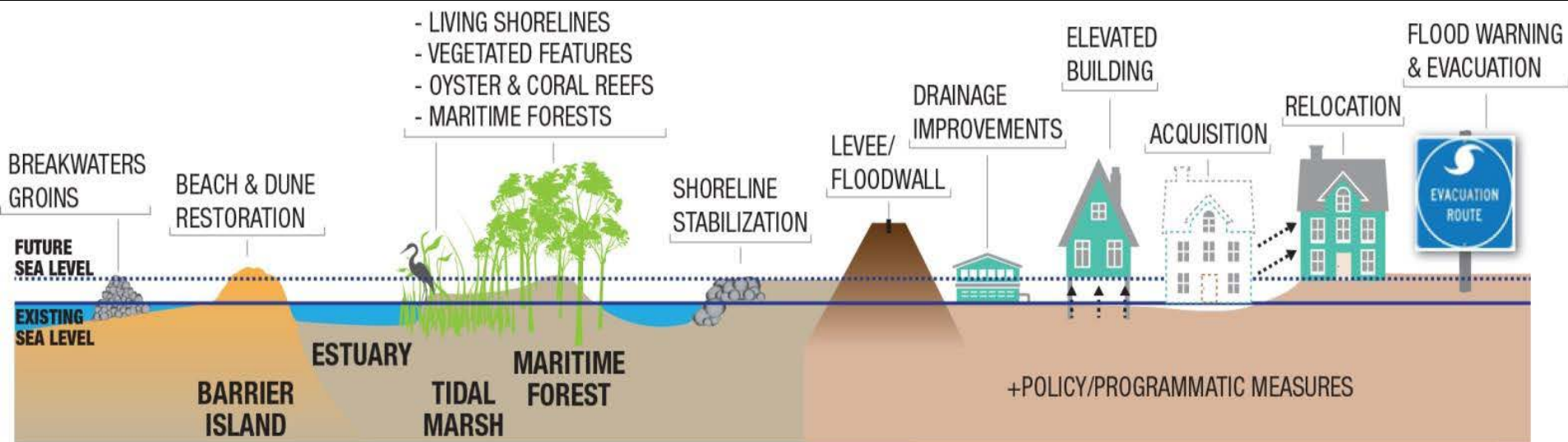
Coastal Storm Damage Risk

- Loss of life
- Destruction of infrastructure
 - Homes, roads, businesses, industry
- Economic impact to region and Nation
 - Closure of ship channels; small businesses & industries; job loss
- Environmental impact
 - Erosion of shorelines
 - Loss of wetlands
 - Impacts to wildlife
 - Hazardous materials



Integrated “Lines of Protection”

- Multiple lines – combination of natural and structural features
- Increasing levels of protection from offshore to inshore



Examples of Integrated Lines of Protection

- Low surge protection
 - Offshore breakwaters
 - Reduce waves and coastal erosion



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Examples of Integrated Lines of Protection

- Low/medium surge protection
 - Marsh, beach and dune restoration



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Examples of Integrated Lines of Protection

- High surge protection
 - Levees/flood walls
 - Block storm surge from moving inland

Freeport Hurricane Protection System



Texas City Levee
Hurricane Ike Aftermath



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Examples of Integrated Lines of Protection

- High surge protection
 - Seawalls/flood gates
 - Protect developed areas from storm surges
 - Prevent storm surge from entering coastal inlets and bays

Galveston Seawall



Dutch Floodgate



Examples of Ecosystem Restoration

Oyster Reef Restoration – photo courtesy TNC



Bird Island Creation – Galveston Bay



Marsh Restoration – Neches River



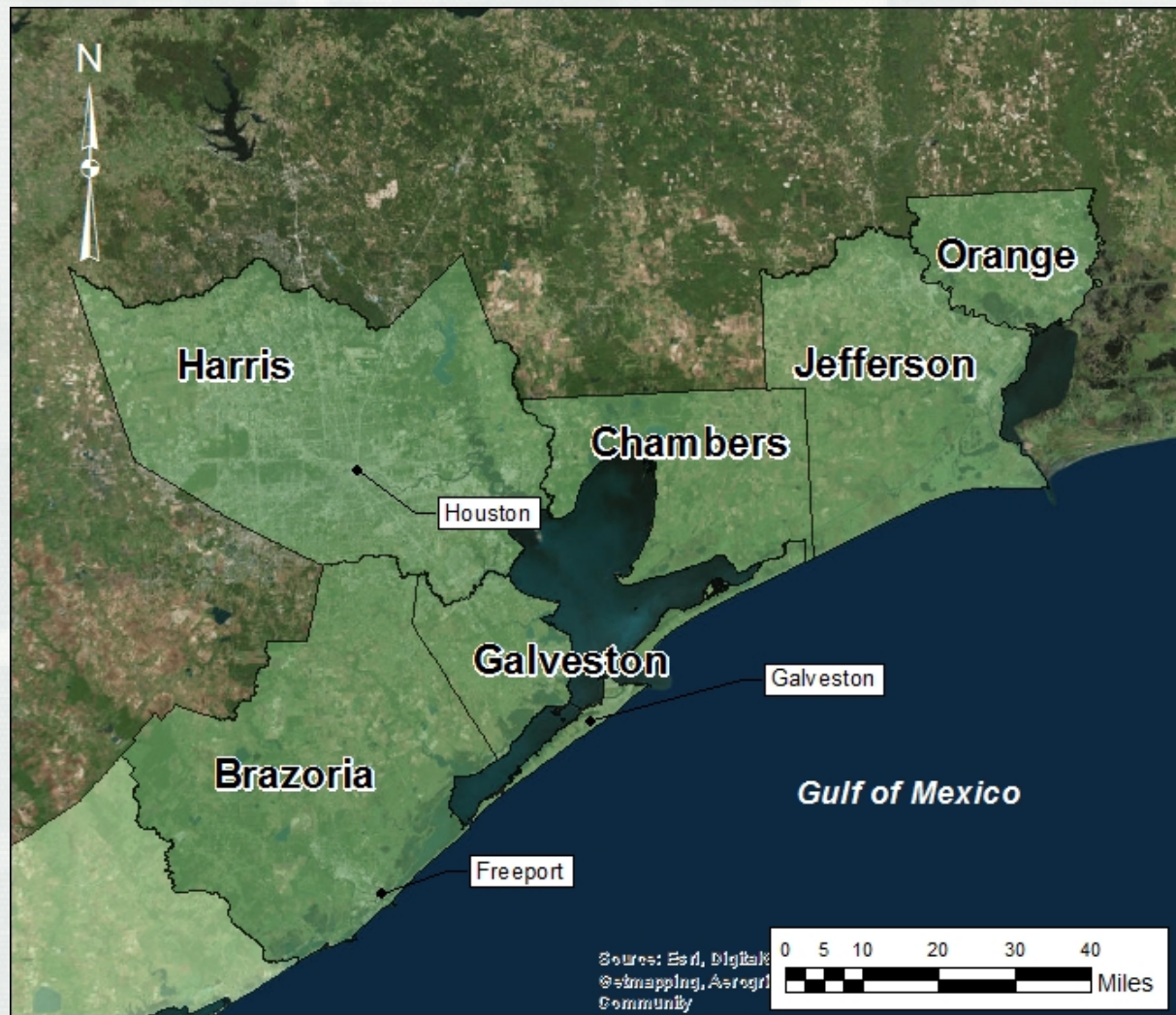
Shoreline Protection –
GIWW in Jefferson Co (courtesy TNC)



Beach Restoration – SPI



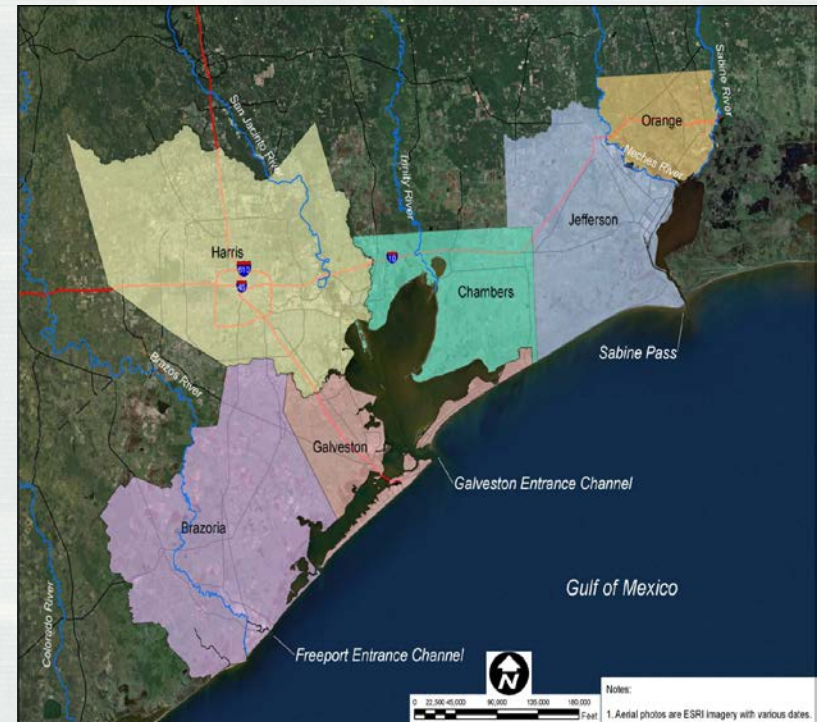
Coastal Texas – Region 1



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Sabine Pass to Galveston Bay Project

- Purpose: Identify CSDRM and ER projects
- Non-Federal Sponsor: TXGLO
- Scoped in 2012
- 250 potential CSDRM and ER measures identified and screened
- Detailed focus areas and future study areas identified
- Currently in Feasibility study phase
 - Informed by related studies
- Estimated cost of study: \$4.4M
- Estimated completion date: Sept 2016

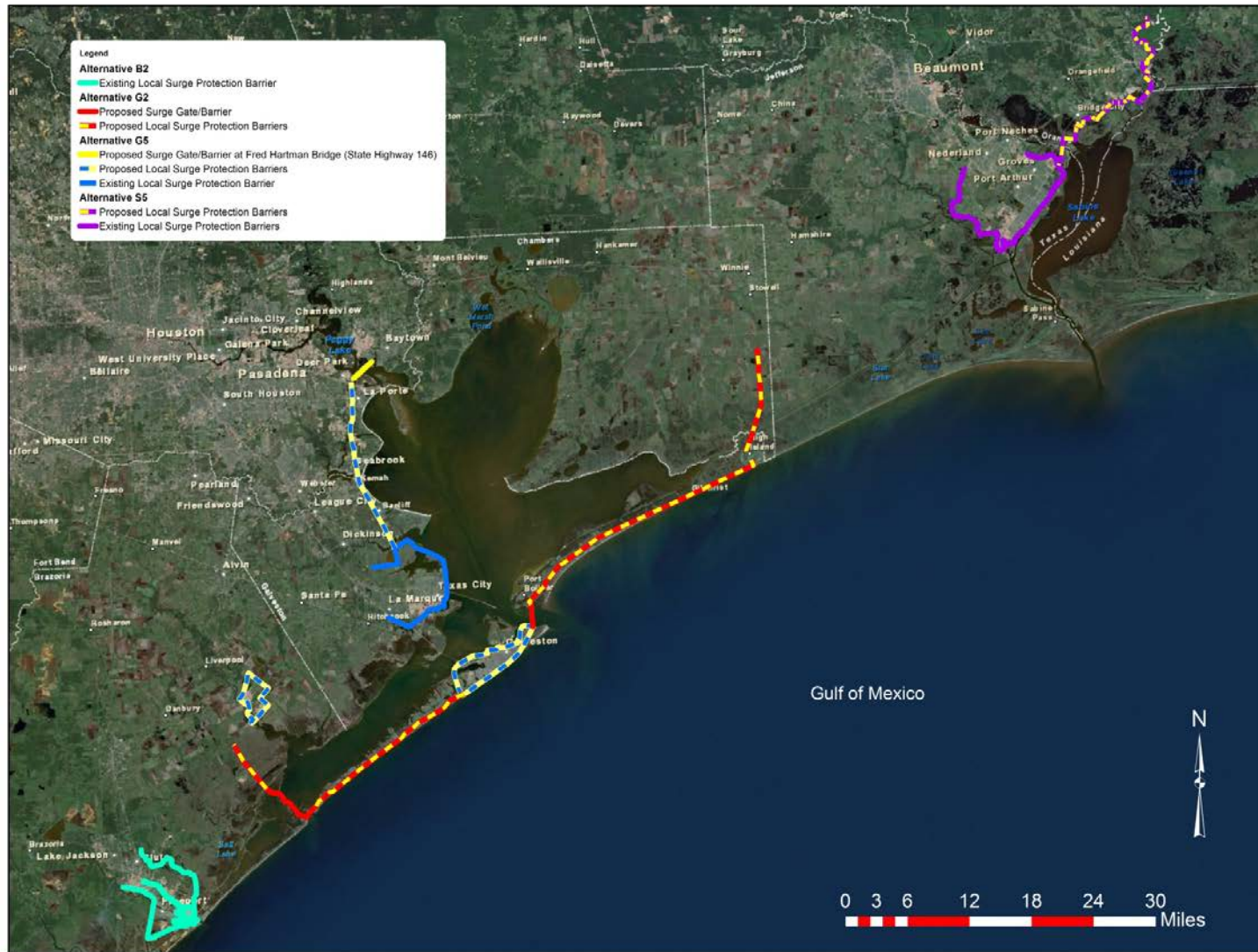


Study Area: Upper TX coast



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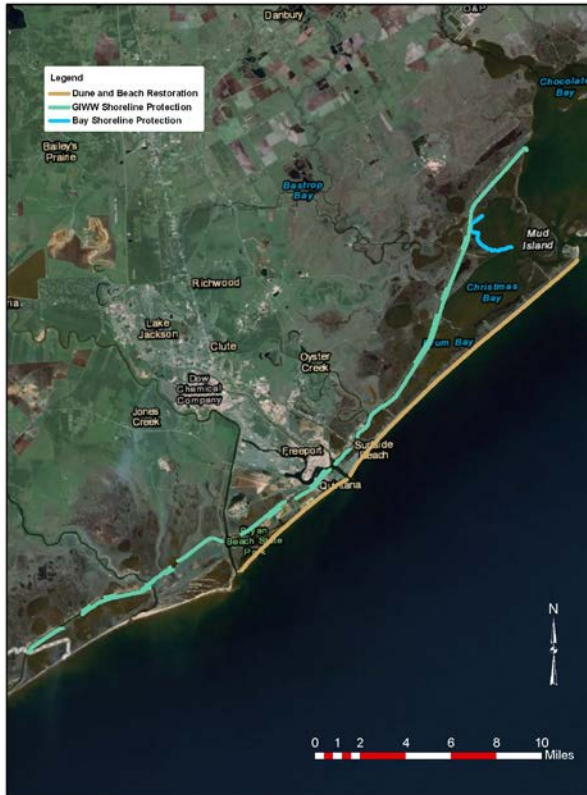
Structural Alternatives – Region 1



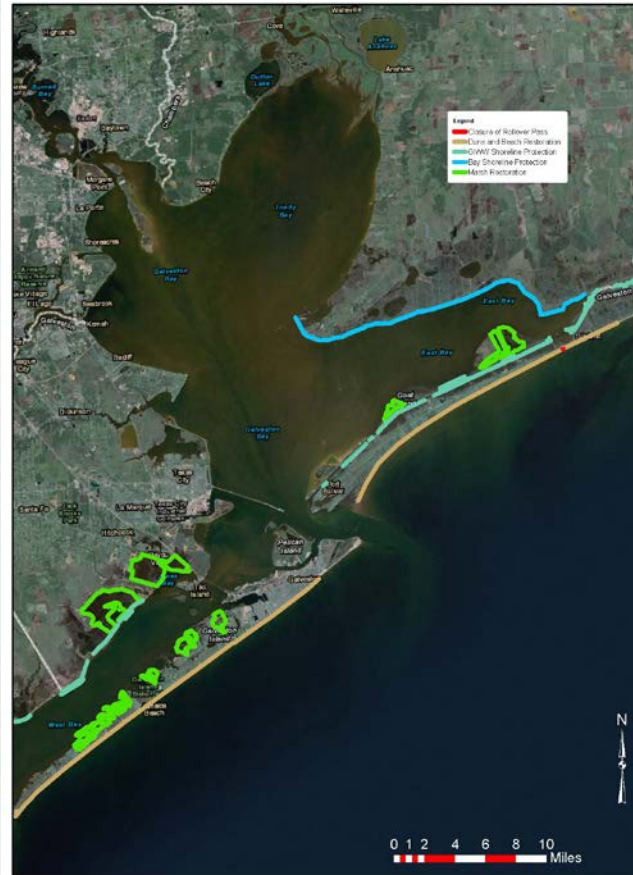
Alternatives B2, G2, G5, and S5 - Structural Alternatives for all Regions



Ecosystem Restoration – Region 1



Brazoria Region



Galveston Bay Region



Sabine Region

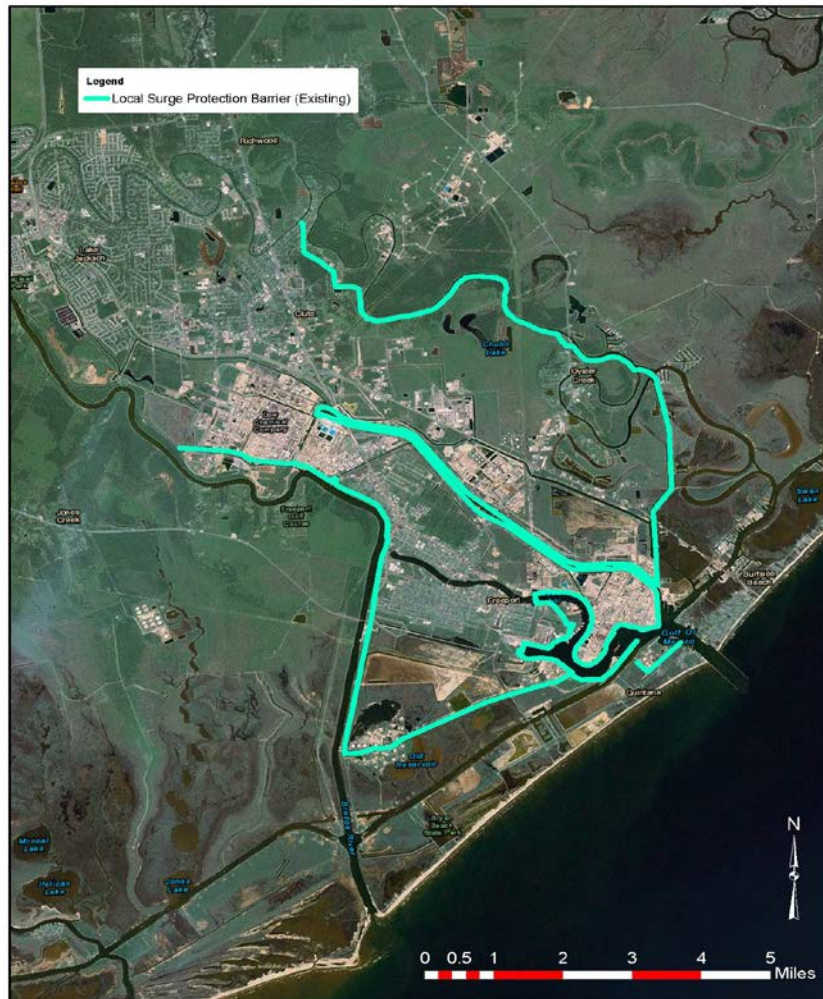


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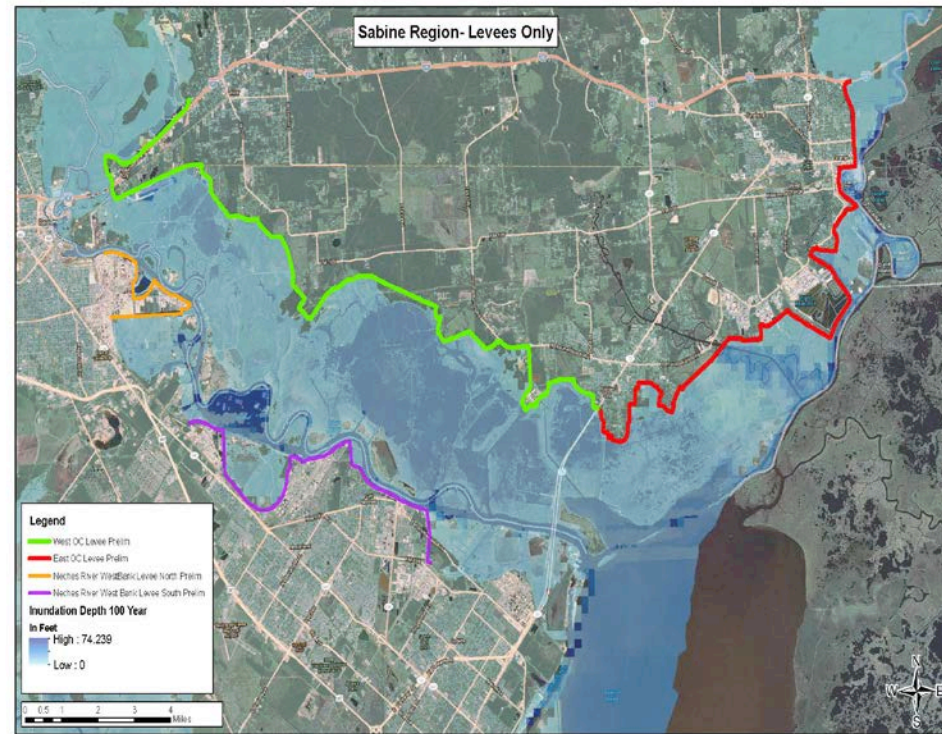
Sabine & Brazoria Area Focus

Coastal Storm Damage Risk Management Features

Reevaluation of existing Freeport Hurricane Flood Protection Levee



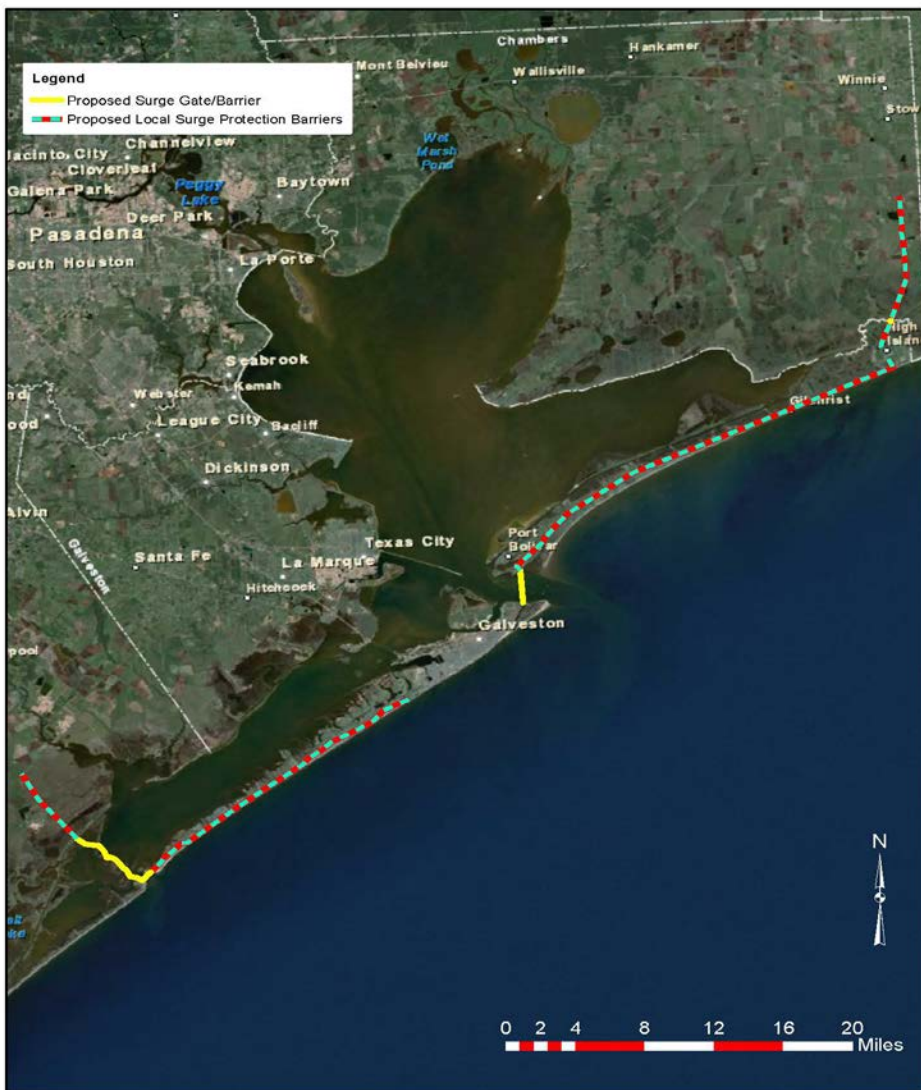
Evaluation of levees in Orange and Jefferson Counties & reevaluation of Port Arthur Hurricane Flood Protection Levee



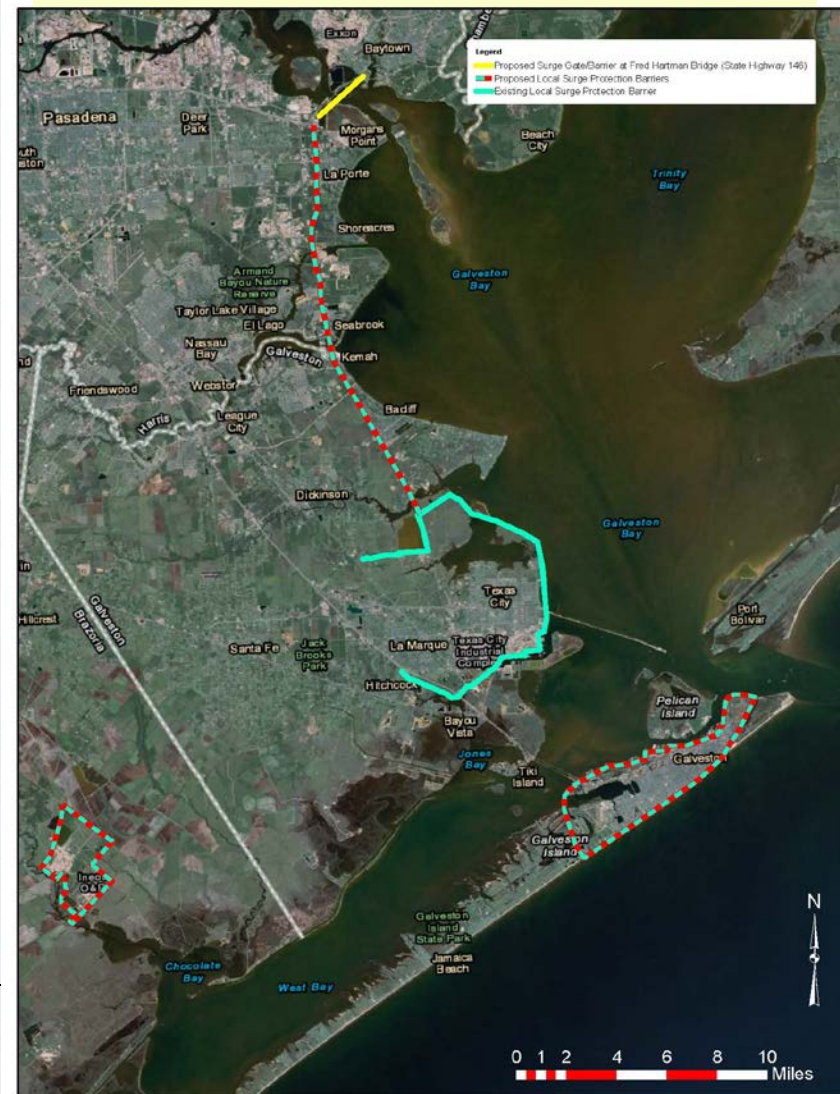
Galveston Bay Region – Future Study

Coastal Storm Damage Risk Management Focus

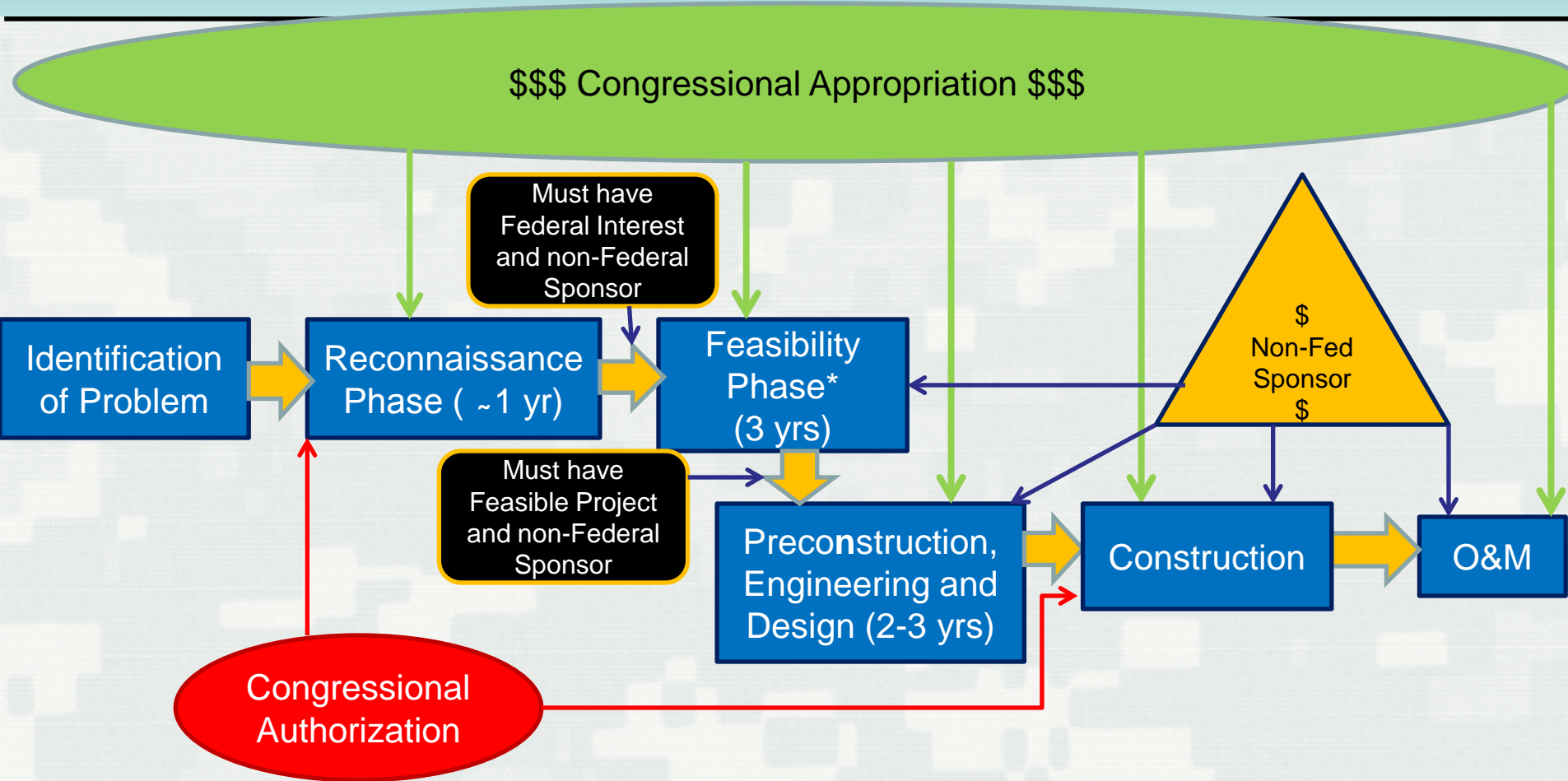
Galveston Bay Coastal Barrier



Galveston Bay Inland Barriers



Corps Process



*Feasibility Phase includes **alternatives analysis** and **NEPA compliance** to determine best plan to provide an environmentally sustainable solution which provides economic value to the nation



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Corps Planning Modernization

➤ SMART Planning

- 2012 the Corps established new policies modernizing the Planning process to reduce costs and time
- 3x3x3 = complete studies in 3 years; cost \$3M; 3 levels of review
- Studies that would not fit into this policy require an exemption from HQUSACE

➤ Water Resources Reform Development Act (WRRDA) 2014

- HQUSACE developing implementation guidance



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Feasibility Analyses Required

■ Engineering

- Impacts to physical environment and processes
 - Circulation/salinity/flooding/erosion
- Constructability/operability
 - Engineering feasibility
 - Real Estate requirements

■ Economics

- Damages to property (personal and public) from flooding
- Project costs (study, design, construction and O&M)
- Benefit to cost ratio (NED Plan)
- Life/health (social impacts)



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Feasibility Analyses Required

■ Environmental

- National Environmental Policy Act (NEPA) compliance
 - Impacts to natural environment
 - Fish and wildlife
 - Habitat
 - Hazardous material spills
 - Cultural Resources



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Non-Federal Sponsors

- All studies/projects need a non-Federal Sponsor to provide cost-share funds
 - Cost-share funds required in all phases
 - Amounts vary depending on phase or activity
- Sponsors need to be public entity with taxing authority
- Studies/Projects can have one or multiple sponsors



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Summary

- Gathering ideas for addressing coastal storm risk management and ecosystem restoration
- Opportunity to:
 - Identify specific problems within local areas
 - Generate potential options to evaluate during feasibility
 - Establish potential partnerships
 - Address the Galveston Region
- Non-Federal Sponsor: ????
 - If no Sponsor is identified – the study does not progress to the feasibility phase



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Submittal of Comments/Ideas

Comments/ideas due by Sept 26, 2014

Send written comments to:

District Engineer, Galveston District
U.S. Army Corps of Engineers
Attn: Coastal TX Protection and Restoration Study
CESWF-PEC-TN
P.O. Box 1229
Galveston, Texas 77553-1229

Send e-mails to: Janelle.S.Stokes@usace.army.mil

Project website: <http://www.swg.usace.army.mil/>



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